REPORT

ON

LOCATION AND UTILISATION

OF

WASTELANDS IN INDIA

PART VIII—MADRAS

WASTELANDS SURVEY AND RECLAMATION
COMMITTEE
MINISTRY OF FOOD AND AGRICULTURE
GOVERNMENT OF INDIA
NOVEMBER, 1961

INTRODUCTION

Appointment of the Committee and the terms of reference

The uncultivated lands in the country may be broadly classified into the following two categories:—

(a) Lands which are really adjuncts of village *abadis* and are meant to serve as pastures and fuel forests or sites for the extension of *abadis;* and

(b) lands in large-sized blocks which have either gone out of cultivation or have never been brought under cultivation.

2. With a view to utilising the latter category of lands which afford the greatest promise for increased agricultural production, the Government of India constituted a Committee, *vide* their letter No. F/1024/Spl/59, dated the 11th June, 1959, (Appendix A) with the following terms of reference:—

(i) to make a survey of land classified as "other uncultivated land excluding fallow lands" and "fallow lands other than current fallows" and locate areas where large blocks of land are available for reclamation and resettlement;

(ii) to suggest suitable measures for reclamation according to conditions in different areas and estimate the cost of reclamation and colonisation and the financial assistance and agricultural extension and training necessary for the settlers (the settlements being made on a co-operative basis);

(iii) to suggest the terms and conditions upon which settlement should be made, the areas to be allotted and the payments to be made by settlers' co-operative; and

(iv) to estimate the economic aspects of such reclamation in terms of the expenditure involved, the likely addition to food production and the employment and income that would become available to settlers and their families and to lay down the priorities *inter se* between different categories of reclaimable lands.

3. In order to ensure effective co-ordination and speedy completion of the work, each State Government/Union Territory was asked by the Government of India to appoint a fairly senior officer who would be able to devote sufficient time to the work of the Committee, help it in collecting the necessary information and carry on correspondence with it. This procedure facilitated the work of the Committee to a great extent in obtaining relevant data from the State Governments and in arranging the tours.

Programme of work

4. The Committee held its first meeting on the 7th July, 1959, when it discussed the plan of work and the staff requirements. In the second meeting held on the 4th August, 1959, a draft questionnaire was discussed and finalised. The questionnaire (Appendix B) was issued to all the State Governments and Union Territories, with a request that their replies should be forwarded to the Committee by the 25th September, 1959. This questionnaire sought information mainly on the availability of wastelands in blocks of 1,000 acres or more and the prospects of resettlement in each

State. Subsequently, as a result of the Committee's discussions with the Liaison Officers of the Punjab and Madhya Pradesh, it was felt that the availability of wastelands in blocks of 1,000 acres or more might be limited, and it was decided to obtain detailed information in respect of all blocks of wastelands measuring 250 acres or more. Accordingly, a letter was issued to all the State Governments (Appendix C) asking for this information.

5. It was laid down in the terms of reference that the Committee should complete its work and submit its proposals in respect of one State in about a month and then proceed to take up investigation in another State. The Committee, however, felt that such a procedure was neither feasible nor advisable as the different State Governments did not have the information required by the Committee readily available and the process of collection took some time. In some cases, special surveys had to be organised. The Committee, therefore, decided that it might take up investigations in respect of the following eight States together in the first phase, *viz.*, Punjab, Madhya Pradesh, Bihar, Kerala, West Bengal, Orissa, Andhra Pradesh and Mysore, and then take up the remaining States. But for this procedure, the work of the Committee would have been very much delayed.

6. After the reports in respect of the different States have been submitted, a general report covering the entire country will be presented which, *inter alia,* will deal with priorities between the different categories of reclaimable lands in the different States.

7. The report for each State will be divided into four sections. Section A will contain general observations about the State regarding its climate, soils, crops grown, irrigation facilities available, etc. Section B will deal with the areas offered for reclamation, their general characteristics, measures necessary for bringing the wastelands under cultivation, and the cost of reclamation. Section C will contain suggestions for follow-on and resettlement operations, if any, the estimated additional production from the reclaimed areas, and priorities between the different categories of reclaimable lands. In Section D, a summary of general conclusions and recommendations will be presented.

Problem

8. The main object of the Committee was to make a survey of lands classified as "other uncultivated lands excluding fallow lands" and "fallow lands other than current fallows", and locate large blocks for reclamation and resettlement.

9. In order to avoid ambiguity in the appraisal of the lands available in each of the above two categories, it is necessary to define the two terms. The classification of land-use adopted by the Directorate of Economics and Statistics, Union Ministry of Food and Agriculture, is nine-fold as under:—

(i) forests,
(ii) barren and unculturable lands,
(iii) land put to non-agricultural uses,
(iv) permanent pastures and meadows,
(v) areas under miscellaneous trees and crops,
(vi) culturable waste,
(vii) current fallows,
(viii) fallows other than current fallows, and
(ix) net area sown.

The lands classified under categories (iv), (v) and (vi) are grouped together and designated as "other uncultivated lands excluding fallow lands". The category "culturable waste" is defined to include all lands available for cultivation but not taken up for cultivation or abandoned after a few years for one reason or the other. Such lands may be fallow for more than five years and may be covered with shrubs and jungle. They may be assessed or unassessed, and may lie in isolated patches or blocks or within cultivated holdings. Lands reserved as pastures for grazing are not included under "culturable waste". Similarly, fallows of one year are classified as "current fallows", while those of 2—5 years are classified as "fallows other than current fallows". Lands left for growth of miscellaneous trees like bamboo, casuarina, fuel trees, etc. are not classified as "culturable waste".

10. Although the classification suggested by the Ministry of Food and Agriculture has been adopted in all the States, the Committee was informed during the course of discussions with the State officials that the concept of "other uncultivated lands excluding fallow lands" was not yet clearly understood. Lands which were classified as "culturable waste" at the time of settlement some years ago still continue to be shown as such in the revenue records even though they cannot be made culturable after incurring any reasonable expenditure. Similarly, some of the lands which are culturable continue to be classified as barren and unculturable or pasture lands. In some other cases, the pasture lands have been included in the category of culturable waste. Further, the category "other uncultivated lands excluding fallows" is treated as a sort of residual class in which are included all lands not accounted for under any other class.

11. In view of these considerations, we are of the view that the areas included in the two categories, *viz.*, "other uncultivated lands excluding fallow lands" and "fallow lands other than current fallows" may not fairly represent the actual extent of culturable wastelands in the country, and accordingly much reliance cannot be placed on the statistics supplied by the State Governments. The mere collection of statistics under the head "culturable waste" can serve but little purpose unless detailed information on the types of wastelands available in each State, the ownership of such lands, their availability in sizeable blocks and the cost of reclamation measures is available. We were glad to note that some of the States had realised the importance of collecting such statistics and had either started the necessary surveys or were preparing to do so for achieving the above object. This is a step in the right direction and any assistance that the Central Government can give in this matter will greatly facilitate the collection of vital statistics on proper land use. For the purpose of our report, we have relied on the data furnished to us by the revenue/agricultural agency of each State.

12. As regards resettlement, the terms of reference of the Committee enjoin upon it to locate areas where large blocks of land are available for reclamation and resettlement. We consider that the resettlement work is not the be-all and the end-all of our labours and that the main job is to locate lands which can be reclaimed and brought under the plough for increasing the food resources of the country. We have, therefore, suggested resettlement schemes only in cases where food production would be hindered without resettlement work.

13. We have viewed the entire problem mainly from an agricultural angle, but at the same time, we have tried to deal with matters which go beyond the purely agricultural aspects of the subject, for we do recognise that the problem of utilisation of wastelands involves not merely the adoption of agricultural techniques but an appreciation of a variety of human and social aspects.

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Part VIII

Madras

PREFACE

The report deals with the availability of wastelands in large-sized blocks in Madras and the measures to be taken for their reclamation.

2. With a view to acquiring some knowledge of the wastelands found in the State, we undertook tours of certain representative areas on the 28th and 29th November, 1960. On the 28th November, 1960, wastelands in the Attur taluk in the Salem district were visited while on the next day, the areas in the Musiri and Lalgudi taluks in the Tiruchirapalli district where some reclamation and resettlement schemes undertaken by the State Government were in progress, were inspected. On the 21st September, 1961, the draft report of the Committee was discussed at Madras with the co-opted members in the State and finalised.

3. We wish to express our gratitude to the officials of the Madras Government who gave us the benefit of their views. We are grateful to the Liaison Officer, Shri S. M. Sulaiman, formerly Joint Director of Agriculture, for obtaining the necessary data and arranging the tours of the Committee. We are also thankful to the District Collectors of Salem and Tiruchirapalli who were good enough to accompany us on our tours and showed us round the areas.

4. We are highly indebted to Dr. S. P. Raychaudhari, Chief Soil Survey Officer, Indian Agricultural Research Institute, for furnishing the data on the soils of the State, and for allowing us to make use of the facilities of the Cartographic laboratory at the Institute for printing the maps included in the Report.

SECTION A

GENERAL ASPECTS

General aspects

The State of Madras consists of thirteen districts, *viz.*, Madras, Chingleput, South Arcot, North Arcot, Salem, Coimbatore, Tiruchirapalli, Tanjore, Madurai, Ramanathapuram, Tirunelveli, Kanya Kumari and the Nilgiris. The total geographical area of the State is 50,113 sq. miles.

2. The population of Madras, according to the 1951 census, is about 30 millions, which gives an average density of 600 persons per sq. mile, as compared to 287 for the country as a whole. Of the total population, 62.8 per cent is engaged in agricultural pursuits. The rural population is 75.6 per cent of the total population.

3. Based on its physical features, the State may be broadly divided into the following regions* :—

(i) Sub-tropical regions of the Nilgiris, the Palnis and the Shevaroys, and

(ii) Tropical region.

4. The sub-tropical region has a temperate climate. The important plantation crops of this region are tea, coffee, and rubber. Various other spice crops are found growing luxuriantly. The Nilgiris have an average elevation of 5,000 to 6,000 ft. the highest peak being 8,640 ft. above sea-level.

5. The tropical region may be sub-divided into four sub-regions as below:—

5.1. The delta areas of Tanjore, Tiruchirapalli and South Arcot districts, where paddy is extensively cultivated.

5.2. The sub-region to the north of the delta areas comprising North Arcot, Chingleput and the remaining part of South Arcot, which receives both the monsoons. Over 40 per cent of the cropped area is irrigated.

5.3. The region to the south of the deltas consisting of the districts of Ramanathapuram, Tirunelveli, Kanya Kumari and parts of Madurai and Tiruchirapalli. This area mainly receives the north-east monsoon, and 30 to 40 per cent of the cropped area is irrigated.

5.4. The rest of the plains area to the west of the deltas in Coimbatore, Salem and parts of North Arcot, Tiruchirapalli and Madurai districts. This region has a relatively low rainfall, and 20 to 30 per cent of the cropped area is irrigated.

6. The important rivers of the State are the Cauveri, the Vaigai and the Tambaraparni, which have their source in the Western Ghats. There are also the Palar and Ponnar which rise in the Mysore State. Besides, there are several streams and minor rivers of local importance.

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*Information based on "Farmers of India, Madras State".

Climate

7. The climate of the State is tropical and free from the extremes of temperature. The maximum temperature ranges from 95° to 110°F in the summer, while the minimum temperature in the cold season varies from 65° to 85° F. The State receives both the south-west and north-east monsoons, but most of the rainfall is derived from the north-east monsoon, except in the districts of North Arcot, Salem and the Nilgiris where the south-west monsoon is more vigorous. The coastal districts of Madras, Chingleput, South Arcot and Tanjore receive 30 to 40 inches of rain. In the inland districts of Madurai, Ramanathapuram, Tirunelveli, Kanya Kumari, North Arcot and Tiruchirapalli, the average rainfall is between 20 inches and 30 inches. The westernmost districts of Coimbatore and Salem receive between 20 and 25 inches of rain, while the rainfall in the Nilgiris is over 60 inches.

Soils

8. The soils of Madras may be classified into five major groups, *viz.*, red and lateritic soils, black soils, mixed red and black soils, alluvial soils, and forest and hill soils (*vide* Map I). A brief description of these soils is given below.

8.1. Red and lateritic soils are the predominant soil types of the State, and occur in one form or the other in all the districts. The red soils occupy the largest areas in the districts of Madurai and North Arcot, and are common in Chingleput, South Arcot, Salem, Coimbatore, Tiruchirapalli and Tirunelveli. The texture of red soils varies from sand to clay, loams being more common. The soil is red when the iron oxide occurs as an hydrous ferric oxide, but the colour is yellow when the oxide is in the hydrated form as limonite. Generally the top soil is red with the sub-surface soil yellow in colour. The pH of these soils ranges from 6.5 to 8.

8.2. Black soils are found in all the districts of the State, except the Nilgiris. They are most commonly met with in the districts of Ramanathapuram and South Arcot, where 61 per cent and 45 per cent, respectively, of the total cultivated area is composed of them. They are shallow and deep, the deep soils having a tendency to develop deep fissures during the summer. Free calcium carbonate is present in the form of *kankar,* and in some profiles, it may appear as a sort of *kankar* layer. These soils are less retentive of moisture and are more suited to irrigation than the Bombay Deccan black soils.

8.3. In many localities in the State red and black soils occur side by side. They are derived from the same parent rocks. While the red soils are in the uplands, the black soils occur in the low-lying lands. The difference in colour has been attributed to the difference in the degree of hydration of the iron present in the soil. However, the results of extensive investigations have shown that black soils do not always occupy lower situations as compared to red soils.

8.4. The deltas and coastal areas contain alluvial soils transported from the hills and uplands. The coastal soils are sandy and low in fertility. They are used for the cultivation of cocoanut, cashewnut and casuarina. The soils of the deltas are, however, heavy, and rich in plant nutrients. The major tract of river alluviums is in the Tanjore district, a large part of which is formed by the Cauvery delta. This alluvium is deficient in organic matter, nitrogen and phosphoric acid, but is rich in potash and lime. The pH ranges from 7 to 8.2.

8.5. The forest and hill soils are mostly found in the Nilgiris, and also in the eastern strip of the Kanyakumari district. These soils are under forests or grass. They are highly porous, and rich in organic matter, nitrogen and other nutrients. They vary from clay loam to sandy clay loam. Their pH ranges from 4.5 to 6.

9. The important crops grown in the different soil zones are as below:—

Soil Zone	*Crops*
Red and lateritic soils, Black soils, Mixed and black soils.	A large variety of crops are grown. The important crops are paddy, *cholam*, *cumbu*, *ragi*, *kulthi*, groundnut, gingelly, pulses, cotton, sugarcane, banana.
Alluvial soils (coastal and deltaic)	Paddy coconut, cashewnut, bananas, Punjab-American 216F cotton.

Irrigation

10. The total irrigated area in the State in the year 1957-58 was 7.4 million acres, out of the total cropped area of 16.7 million acres, representing about 44 per cent of the total cropped area. The main sources of irrigation in the State are canals and tanks, covering about 38 and 37 per cent, respectively, of the net irrigated area. Wells account for 23 per cent of the irrigated area, and other sources such as spring channels for about 2 per cent. The main crop under irrigation is rice, covering about 71 per cent of the total irrigated area.

Natural vegetation, crops grown and yields obtained

11. The State has a rich and varied flora. There are six distinct forest belts. These are the tropical, moist, deciduous forest belt in the western part of the Coimbatore and Tirunelveli districts; the dry deciduous forest belt; the thorn forest belt of scrub jungles; the tropical evergreen low forest belt on the east coast; the sub-tropical hill forest belt in the Nilgiris between the altitudes of 3,000 ft. and 5,000 ft., with a mixture of wet tropical and wet temperate forests, and the montane temperate forest belt above 5,000 ft. A number of valuable timber trees like teak, rosewood and white cedar are found in the deciduous forest belt. In the Nilgiris nutmeg, cocoa, clove, cinnamon and vanilla grow well.

12. The principal food crops grown in the State are rice, *cholam, cumbu, ragi* and pulses. Of the cash crops, the most important are groundnut, gingelly, sugarcane and cotton. Bananas, mangoes and vegetables are commonly grown.

13. Rice is the staple food crop of the State. Of the total cropped area of 17.6 million acres, rice occupied 5.6 million acres during 1957-58, representing about 32 per cent of the cropped area. It is grown in all the districts of the State, except the Nilgiris, mainly in the canal and tank irrigated areas. In many places two crops are raised in a year. The production of rice during the year 1957-58 is estimated at 3.2 million tons.

14. *Cholam* and *cumbu* are the other two important food crops in the State, which occupied an area of 1.7 and 1.2 million acres respectively. The total production of *cholam* during 1957-58 was 5.3 lakh tons, and of *cumbu* 2.7 lakh tons. The output of *ragi,* covering an area of 0.85 million acres, was 3.4 lakh tons.

15. Among the commercial crops, groundnut and cotton are the most important, covering an area of 1.9 and 1.0 million acres respectively. The production of groundnut was 9 lakh tons (unshelled), and of cotton 0.6 lakh tons in terms of lint. Sugarcane is an important wetland crop of the State, and the total production was 4 lakh tons in terms of gur. The output of cocoanut was estimated at 415 million nuts.

16. The average yields of important crops grown in the different districts are tabulated in Appendix D.

SECTION B

DESCRIPTION OF BLOCKS AND MEASURES FOR RECLAMATION

14. According to the land utilisation statistics for the year 1958-59 the total area of the State may be classified as under:—

	Acres (million)
(*i*) Forests	4·39
(*ii*) Land not available for cultivation—	
(*a*) barren and unculturable land	2·47
(*b*) land put to non-agricultural use	3·10
(*iii*) Other uncultivated land excluding fallows—	
(*a*) Culturable waste	1·99
(*b*) permanent pastures and other grazing lands	0·94
(*c*) land under miscellaneous trees and groves	0·65
(*iv*) Current fallows	2·55
(*v*) Fallows other than current fallows	1·64
(*vi*) Net area sown	14·29
TOTAL ..	32·02

15. The above statement shows that the total area under the head "other uncultivated lands excluding fallows" is 3.58 million acres, and the area classified as "fallows other than current fallows" is 1.64 million acres. The district-wise distribution of the areas under each of the above heads is given in Appendix E.

16. Of the total area of 5.22 million acres under the heads "other uncultivated land excluding fallows" and "fallows other than current fallows", an area of 38,466 acres has been offered for reclamation in compact blocks of 250 acres or more. This area is relatively small as compared with the figures reported in the statement on land utilisation in para 14. It was explained to us that, although the total area reported in the revenue records under culturable waste was 2 million acres, a large proportion of it had been brought under cultivation by encroachment by landless labourers or cultivators. Further, in 1954, the State Government had issued instructions to the District Collectors to collect information on certain specified points in respect of blocks of wastelands measuring 50 acres and more in one taluk in each district. These surveys were subsequently extended to the remaining taluks in the districts, and the work was completed by the middle of 1957. On the basis of the information thus collected, the district Collectors were instructed by the State Government to arrange for the cultivation of compact blocks of wastelands located in the different districts. In these circumstances, it was felt that there was hardly any possibility of large-sized blocks of wastelands being available in the State, besides those blocks regarding which information had been furnished to the Committee, and the wastelands in the Attur taluk of the Salem district which, though allotted to landless labourers a few years ago, were now lying fallow owing to the inability of most of the allottees to cultivate them.

17. The wastelands offered for reclamation in the State can be bro divided into the following three categories:—

I—Dry lands,
II—Saline lands, and
III—Lands infested with thick growth of bushes and jungle.

18. The distribution of wastelands in categories I to III in the vai districts is given below:—

District	Area available in category (acres)			1 (a
	I	II	III	
Chingleput	259	—	—	
North Arcot	3,643	—	—	
South Arcot	3,330	—	—	
Ramanathapuram	5,664	—	—	
Coimbatore	400	—	—	
Tirunelveli	3,550	—	—	
Salem	5,528	—	—	
Tiruchirapalli	5,892	—	—	
Tanjore	—	8,000	—	
Kanyakumari	—	—	2,200	
	28,266	8,000	2,200	3

19. Map II shows the location of blocks of wastelands in cate I, II and III.

20. A few comments in respect of each block are given below, fuller details are tabulated in Appendix F.

Category I

21. Thirty-nine blocks comprising a total area of 28,266 acres been located for reclamation in this category as per details given bel

District	Block No.
Chingleput	1
North Arcot	2—6
South Arcot	7—13
Ramanathapuram	14—16
Coimbatore	17
Tirunelveli	18—19
Salem	20—24
Tiruchirapalli	25—39

22. *Block* 1 comprising 259 acres is situated in village Tham in the Chingleput district. The land is uneven. The soil is all but is slightly gravelly and poor in organic matter. The area is de vegetation. The rainfall is about 40 inches, and is mostly received months of October to December. No irrigation is available. The reclamation involving levelling and construction of contour-bunds, about Rs. 100 per acre.

23. *Block* 2 measuring 2,000 acres is located in village Chengalr in the Wallajah taluk of the North Arcot district. The land is eroded, but terracing will render it fit for cultivation. The soil is r

has a depth of 2 to 2½ feet. The rainfall is 20—25 inches, most of which is received during September to December. No irrigation is available. The cost of reclamation is estimated at about Rs. 50 per acre.

24. *Blocks* 3 and 4 comprising 883 acres are located in the Chengam taluk of the North Arcot district. Part of the area is barren, and the rest is infested with shrubs and bushes. The soil is red and gravelly, and has a depth of about 2—5 feet. Terracing will be necessary to make the area suitable for cultivation. The rainfall is about 30 inches. No irrigation is available. The cost of reclamation is estimated at Rs. 100 to Rs. 150 per acre.

25. *Block* 5 comprising 500 acres is located in village Aypedu, in the North Arcot district. The land is infested with weeds, shrubs and bushes, which will need to be cleared. It is also slightly eroded. The soil is red and has a depth of about 3 feet. The rainfall is about 40 inches. The cost of reclamation is estimated at about Rs. 50 per acre.

26. *Block* 6 measuring 260 acres is located in village Cholavaram, in the North Arcot district. The land is uneven and contour-bunding will be necessary. The soil is red and has a depth of about 1 to 1½ feet. The rainfall is about 38 inches, most of which is received during the period June to September. No irrigation is available. The cost of reclamation is estimated at Rs. 50 to Rs. 75 per acre.

27. *Block* 7 comprising an area of 280 acres is located in village Pullur, in the South Arcot district. The area is infested with shrubs and bushes. The land is gently sloping, and should be contour-bunded. The soil is red. The rainfall is about 38 inches, which is fairly well-distributed. The cost of reclamation is estimated at Rs. 50 to Rs. 100 per acre.

28. *Blocks* 8—13 comprising 3,050 acres are located in the Kallakurichi taluk of the South Arcot district. Other details are the same as for block 7.

29. *Block* 14 comprising 4,500 acres is located in the Karaikudi taluk of the Ramanathapuram district. Only a portion of the block is infested with weeds, shrubs and bushes, and can be cleared with the help of tractors. The land is gently sloping, and suitable soil conservation measures will be necessary. The soil is red and has a depth of 6 to 8 feet. The rainfall is about 30 inches. No irrigation is available. The cost of reclamation is estimated at Rs. 50 to Rs. 100 per acre.

30. *Block* 15 measuring 270 acres is located in village Madukurani in the Sivaganga taluk of the Ramanathapuram district. The area is infested with weeds, shrubs and bushes. The soil is red loam and is barely 6 inches in depth. The land is gently sloping. The rainfall is about 25 inches, but it is variable. No irrigation is available. The land does not seem to be suitable for cultivation.

31. *Block* 16 comprising 894 acres is located in village Nettayarendal, in the Ramanathapuram district. The area is infested with shrubs and bushes in some places. The land is gently sloping, and suitable soil conservation measures will be necessary. The soil is red. The rainfall is about 34 inches. No irrigation is available. The cost of reclamation is estimated at Rs. 100 per acre.

32. *Block* 17 comprising 400 acres is located in village Vadugapatty, in the Erode taluk of the Coimbatore district. The area is infested with

weeds and shrubs, and the land is slopy. The soil is red. The rainfall is about 20 inches. Irrigation can be provided for a period of about 4 months in alternate years from the Lower Bhawani project. Wells can be sunk for supplementing irrigation supply. The cost of reclamation is estimated at Rs. 200 per acre.

33. *Block* 18 consists of two sub-blocks measuring 250 acres and 300 acres located in villages Padmanabhamanglam and Srimoolakarai, in the Tirunelveli district. The area is infested with small shrubs and bushes. The land is steep, and is suitable for afforestation. The soil is red and gravelly. The rainfall is about 25 inches. No irrigation is available.

34. *Block* 19 measuring 3,000 acres is located between villages Kuttam and Muthumothanmozhi, in the Nanguneri taluk of the Tirunelveli district. The soil is red and gravelly, and is poor in organic matter. The rainfall is 20 to 25 inches, and it is also uncertain. The land is unsuitable for arable cultivation.

35. *Blocks* 20—24 comprising an area fo 5,528 acres are located in the Attūr taluka of the Salem district, as per details given below:—

Village	Area (acres)
Appasamudram	1,092
Paithur	1,410
Ramanaickenpalayam	1,640
Siruvachur-Thalaivasal	1,002
Mangini	384

35.1. The soil of the blocks in villages Ramanaickenpalayam and Appasamudram is loamy, and varies in colour from light red to black with a depth of 1 to 4 feet. The soil of the block in village Paithur is mostly red loam with black loam found in some places, while in village Mangini it is red loam and gravelly mixed with pebbles here and there. The land is uneven. In village Siruvachur, the soil is red loam and is devoid of vegetation, except for some patches of grass. Most of the land is fairly even. The rainfall is about 40 inches, and is fairly well distributed. It is derived from both the south-west and north-east monsoons, and about 5 inches of it is received in the hot weather. The water-table in all the blocks is fairly high, and open wells can be sunk at a depth of 20 to 30 feet. In the lands adjoining the hills, there are a number of streams which flow up to the end of February. The reclamation of these lands involves the clearance of bushes and shrubs, and will cost about Rs. 100 per acre.

35.2. It appears that the wastelands in the Attur taluka have good potentialities for agricultural production. Owing to the erratic nature of the monsoon, supplemental irrigation from wells is necessary for successful cultivation. The hill slopes should be used for farm forestry, and the lands at the foot of the hills reserved for pastures. The selection of the right type of settler will be essential to ensure the success of the settlement schemes.

35.3. We were further informed that, of the total area of 52,000 acres of wastelands reported in the revenue records to be available in the Attur taluk, over 33,000 acres have already been allotted for individual cultivation. A greater part of the latter area had not, however, been brought under cultivation due mainly to lack of irrigation facilities and the selection of settlers who did not have sufficient resources for reclaiming the lands and for follow-on operations. In the circumstances, it appears that large areas of wastelands are still available in the Attur taluk, and we would accordingly suggest that a rapid survey should be conducted to locate these areas so that they could be taken up for cultivation.

36. *Blocks* 25—39 : Block 25—28 measuring 1,058 acres are located in the Musiri tehsil, of the Tiruchirapalli district, and the other blocks comprising 4,834 acres are in the Lalgadi tehsil of the same district. The blocks are infested with weeds and shrubs. In blocks 25 to 28, the land is gently sloping, while it is mostly undulating in blocks 29—39. The soil in blocks 25 and 26 is black loam, and it is mostly red in other blocks, with patches of black soil found here and there. The soil depth is barely 9 inches. The rainfall in the Musiri tehsil is 27 inches, and it is much less in the Lalgudi tehsil. The areas offered for reclamation are practically devoid of trees and shrubs and can be brought under cultivation by adopting suitable soil and water conservation measures. The uplands are more suited for afforestation, and should be planted to cashewnut, casuarina and other trees of economic importance. The cost of reclamation is estimated at Rs. 150—200 per acre.

Category II

37. Only one block comprising a total area of 8,000 acres has been located in this category as per details below.

38. *Block* 40 comprising 8,000 acres of swampy land is located in the Pattukottai taluk of the Tanjore district. The lands are highly saline due to inundation by seawater over a number of years. The area is swampy and only scrub jungles are found. According to the survey carried out by the State Government, the salinity is so high that the lands will not support the growth of trees of any economic importance. Further, the drainage of the stagnant water from the swampy land would present a very serious problem, and the expenditure involved on drainage and the removal of salinity from the land may not be commensurate with the returns after reclamation. Accordingly, the area is not recommended for reclamation.

Category III

38. Two blocks comprising an area of 2,200 acres infested with thick jungle growth have been located under this category.

39. *Block* 41 comprising 1,200 acres is located in village Thadikarankonam, in the Kanyakumari district. The area is infested with thick jungle growth. A portion of the area is heavily eroded with deep gullies. The soil is alluvium. The rainfall is about 80—100 inches. Perennial irrigation can be provided from the nearby hill streams. In view of the heavy rainfall, the block is suitable for growing crops like tea, rubber, pepper, etc. The cost of reclamation is estimated at Rs. 200—300 per acre.

40. *Block* 42 comprising 1,000 acres is located in village Muttam along the coast, in the Kanyakumari district. The area is badly eroded with deep gullies. The soil is red. The rainfall is about 40 inches. No irrigation is available at present. The land is mostly suited for growing crops like cashewnut, cocoanut, etc. The cost of reclamation is estimated at Rs. 500 per acre.

SECTION C

DISPOSAL OF RECLAIMED LANDS FOR CULTIVATION

Nature of ownership of wastelands and their disposal for cultivation

41. In this Section, we may deal with the various measures needed for the disposal and development of wastelands which have been located in the State. These measures would primarily depend upon the nature of ownership of wastelands. A statement showing the break-down of wastelands according to their ownership in respect of categories I, II and III is given in Appendix G. It would be observed from the statement that most of the lands in the three categories belong to the Government, while only a small percentage of these lands is privately-owned. A small area belongs to the village panchayats. The problems involved in the disposal of wastelands in each category of ownership are discussed below.

41.1. *Private lands*: The lands belonging to private individuals are mostly located in the South Arcot and North Arcot districts. These lands, after reclamation, may be handed over to their respective owners for follow-on cultivation. The cost of reclamation of these dry lands is not likely to be high and there may not be any difficulty in recovering the reclamation charges. We recommend that 25 per cent of the expenditure on contour-bunding of the dry lands may be treated as subsidy to be shared equally between the Centre and the State Government, and the balance advanced as loan to the cultivators to be recovered from them in equal annual instalments spread over a period of 10—15 years.

41.2. *Government lands* : As stated earlier, the bulk of the wastelands in blocks of 250 acres or more belongs to the Government. In order to bring these lands under cultivation, we suggest that co-operative colonies of landless labourers, the members of the Scheduled Castes and the Scheduled Tribes, etc., may be set up, or that these lands may be allotted to landless labourers, etc. in accordance with the existing orders of the State Board of Revenue. We were informed by the State officials that the most suitable method of disposal of Government wastelands in the different districts, particularly in Salem and Tiruchirapalli, was to arrange for their cultivation on a co-operative basis, since the settlers have meagre resources for bringing these lands under cultivation. As the expenditure on the setting up of co-operative colonies of settlers is usually heavy, we suggest that it may be partly met from the provision made for settlement schemes by the Ministry of Food and Agriculture, and partly from the amount earmarked for the welfare of the Scheduled and Backward Classes by the Ministry of Home Affairs. A model settlement scheme is given in Appendix H.

Suggestions for effective utilisation of wastelands

43. A detailed soil survey for land-use should be carried out in each area proposed for reclamation, so that the lands are put to proper use. The State Government may apply for financial assistance to the Central Soil Conservation Board for conducting these surveys.

44. After reclamation measures have been carried out, the responsibility for follow-on cultivation should be that of the normal staff of the Agriculture Department. The agricultural staff should suggest suitable cropping patterns and also introduce improved agricultural practices in the

reclaimed areas. The extension staff of the Community Developmnt Organisation can assist, particularly in the demonstration of improved methods of cultivation and in arranging for the supply of agricultural requisites.

45. In the Attur taluk of the Salem district where about 5,500 acres have been located in blocks of 250 acres or more, and where more areas of wastelands are reported to be available (*vide* para 35.3), the rainfall is about 40 inches, but it is not well-distributed. The water-table in all the blocks is fairly high, and open wells can be sunk at a depth of 20—30 feet. In the lands adjoining the hills, there are a number of streams which flow up to the end of February. In view of these considerations, irrigation from wells is feasible and is necessary to ensure good crops. Similarly, in the district of Tiruchirapalli, facilities for irrigation will have to be provided for successful cultivation of the reclaimed lands. Accordingly, we recommend that loans may be given on a liberal scale to the cultivators for sinking wells.

46. Some of the areas in the Salem and Tiruchirapalli districts are rocky, and it will be difficult to dig wells without the help of equipments like drills, blasting units, etc. It was reported to us that these equipments were not available in sufficient quantities in the State. As the lands in these two districts have great potentialities for agricultural production, we recommend that assistance may be given for the import of the necessary equipment for boring wells.

47. Before the wastelands are allotted to landless labourers, the members of the Scheduled Castes and the Scheduled Tribes, etc., these lands should be reclaimed.

48. In any settlement project, the selection of suitable settlers is a vital factor contributing to its success. Accordingly, special attention should be given to this important aspect of settlement work so that the right type of settlers who have an aptitude for agricultural work and who are willing to do hard work are selected.

49. In order that the settlement work is successful, it is necessary that the revenue/block agency should be associated with it so that the problems of the settlers are attended to as expeditiously as possible. Experience has shown that where the District Collectors and the Block Development Officers take personal interest in the settlement work, the projects are often successful.

50. We had an opportunity of visiting some of the settlement projects undertaken by Shri G. M. Badsha, District Collector, Tiruchirapalli, during the Second Plan period. We were much impressed by the progress made by these projects, the co-operative spirit shown by the settlers, and the interest which the officers of the Revenue Department were taking in their execution. In view of the availability of large areas of wastelands in the Salem and Tiruchirapalli districts and the satisfactory progress made in settling landless labourers on these lands, we recommend that suitable provision should be made in the Third Five Year Plan for executing settlement projects in these districts.

51. The general crop patterns for the lands in the different categories are as under :—

51.1. *Category I*: The blocks selected for reclamation in this category are situated in the districts of Chingleput, North Arcot, South Arcot, Ramanathapuram, Coimbatore, Tirunelveli, Salem and Tiruchirapalli. In areas which entirely depend upon rainfall, a dry farming system of cultivation is practised. Suitable crop rotations are in vogue on dry lands, but in some areas the same crops are grown year after year in the same fields. The principal crops are *cholam* (Jowar), *cumbu* (bajra), *ragi,* pulses, gingelly, groundnut and cotton. Mixtures of *cholam* with pulses or gingelly are common. Like *cholam, cumbu* is grown both as a pure crop and as a mixture. In light sandy loams groundnut is cultivated as a rainfed crop. It is grown as a pure crop or mixed with cotton or *cholam.*

51.1.1. Wherever irrigation from wells is available, garden-land cultivation is practised. A variety of crops are grown. *Ragi, cholam* and gingelly are also grown as irrigated crops. Sugarcane is cultivated in rotation with garden-land crops.

51.2. *Category II* : The saline lands in category II are located in the Tanjore district. These are swampy lands, and are not suitable for cultivation due to their high salt content. Paddy can be cultivated in such lands if they are reclaimed.

51.3. *Category III* : The lands in category III are situated in an area of heavy rainfall, and are suitable for growing rubber, tea, pepper, etc. Some of the lands along the coast where the rainfall is not heavy, seem to be suitable for growing crops like cocoanut, cashewnut, etc.

Economic aspects of reclamation

52. We may now examine the economic aspects of reclamation of wastelands included in categories I and III. As stated earlier, the lands in category II are not suitable for cultivation. The two main factors influencing the economics of reclamation are the cost of reclaiming wastelands and the anticipated benefits on account of reclamation in terms of additional agricultural production. In the conditions obtaining in the Madras State, the utilisation of wastelands in some of the districts, particularly in Salem and Tiruchirapalli, involves the establishment of settlement colonies for arranging their cultivation. In determining the economic aspects of a reclamation project, the cost of settlement which is usually heavy, should ordinarily be taken into account. However, we consider that the settlement of landless labourers and the members of the Scheduled Castes and the Scheduled Tribes is a social problem, and the expenditure on this account should accordingly be treated separately from the actual cost of reclamation.

53. As stated in Section B, most of the wastelands in category I are found in the districts of North Arcot, South Arcot, Ramanathapuram, Tirunelveli, Salem and Tiruchirapalli. Of the total area of 28,266 acres which has been located for reclamation, 3,820 acres (270 acres in the Ramanathapuram and 3,550 acres in the Tirunelveli districts) are not suitable for cultivation. These lands are badly eroded, and the expenditure on their reclamation will not be commensurate with the anticipated returns from such lands. As regards the areas located in the Ramanathapuram, North Arcot and South Arcot districts, they are low in fertility and there are also no facilities for irrigation. These lands at present grow only seasonal crops, the yields of which will not exceed 5-6 mds. per acre. The lands in the Salem district, however, are fertile, and with the provision of adequate irrigation facilities, double cropping can be practised on these lands. On a conservative estimate, the additional production of foodgrains from these lands may be assumed as 15 mds. per acre. In the wastelands of the Tiruchirapalli district, the uplands which cannot be reclaimed, may be put

under crops like cashewnut on a plantation scale. The cultivation of cashewnut gives good returns from the 6th year after planting. In the lands where millets can be grown, the average yield in terms of foodgrains may be taken as 8 mds. per acre.

54. To sum up, the wastelands in category I which cannot be reclaimed for growing food crops, can be put under cashewnut and other trees of economic importance. The net return from an acre of land under non-food crops is about Rs. 200 per acre. In the lands where food crops can be grown, the average yield of foodgrains is estimated at 5-6 maunds in the districts of Ramanathapuram, Chingelput, Coimbatore, South Arcot and North Arcot, 15 maunds in Salem, and 8 maunds in Tiruchirapalli.

55. In category III, there are only two blocks of wastelands, *viz.*, blocks 41 and 42. As stated earlier, block 41 is suitable for growing crops like pepper, tea, rubber, etc., which are quite remunerative. The lands in block 42, are fit for growing cashewnut and cocoanut, but the cost of reclamation is heavy.

56. To assess the relative economic benefits of reclamation in the different areas, the figures of estimated additional food production should be studied in relation to the costs of reclamation and other relevant factors. Table I gives the area proposed for reclamation, the cost of reclamation, the additional food production and the cost of reclamation per maund of additional production.

TABLE I

Cost of reclamation of land in categories I and III and estimated additional production

Category	Description	Block No.	Area proposed for reclamation (acres)	Average cost of reclamation per acre (Rs.)	Total cost of reclamation (Rs.)	Additional production per acre (maunds)	Total additional production (maunds)	Value of total additional production (Rs.)	Value of additional production per acre (Rs.)	Average cost of reclamation per maund of additional production (Rs.)
I	Dry lands	1, 2-6, 7-13, 14, 16 and 17	13,026	88	11,46,675	5	65,130	6,51,300	50	17·6
		20-24	5,528	100	5,52,800	15	82,920	8,29,200	150	6·7
		25-39	5,892	175	10,13,100	8	47,136	4,71,360	80	21·9
III	Lands infested with thick growth of Jungle	41	1,200	250	3,00,000					
	TOTAL ..		25,646		30,30,575		1,95,186	19,51,860		

NOTE.—(1) The main food crops in the areas included in category I are millets, gingelly, groundnut and pulses. A common price of Rs. 10 per maund is assumed.

(2) The main crops in block 41 (category III) are rubber, pepper etc., which are remunerative.

(3) The above table excludes 3,820 acres of wastelands in category I which are not suitable for cultivation, and 1,000 acres of wastelands n category III, the cost of reclamation of which is high.

57. It would be seen from the table that the cost of reclaiming 24,446 acres in category I (excluding 3,820 acres which are not suitable for cultivation) comes to about Rs. 27.30 lakhs, *i.e.,* about Rs. 112 per acre. The estimated additional production from the reclaimed lands is 1,95,186 maunds of foodgrains, valued at Rs. 19.51 lakhs. Thus, the value of production will cover the cost of reclamation in about two seasons.

58. The cost of reclaiming 1,200 acres in category III (excluding 1,000 acres, the cost of reclamation of which is high) is estimated at Rs. 30.00 lakhs, *i.e.,* Rs. 250 per acre. Considering that these lands are suitable for growing crops like pepper, tea, rubber, etc., which are remunerative, their reclamation will be economical.

59. As regards the economics of reclamation of the different blocks of wastelands, the lands in the Salem district (blocks 20—24) would appear to be the most profitable in terms of the additional food production per acre, followed by blocks 25—39 located in the Tiruchirapalli district. In the latter district, the cost of reclamation of land is high, but we recommend that these lands may also be assigned a high priority as settlement projects carried out in similar types of lands in this district have proved successful and the experience gained will be useful in extending the operations to these areas. In blocks I, 2—6, 7—13, 14, 16 and 17, the cost of land improvement is not high, and by the adoption of a suitable system of dry farming, the risk of crop failures can be reduced and crop yields improved considerably. The area included in category III (block 41) is small, but the lands are capable of producing good commercial crops like rubber, pepper, tea, etc., which are highly remunerative.

60. In view of what has been stated above, we recommend that the following order of priority may be assigned to the different areas:

District	Block No.	Priority
Salem and Kanyakumari	20—24, 41	I
Tiruchirapalli	25—39	II
Chingleput, North Arcot, South Arcot, Ramanathapuram and Coimbatore.	1, 2-6, 7-13 ,14, 16 and 17	III

SECTION D

SUMMARY OF GENERAL CONCLUSIONS AND RECOMMENDATIONS

Of the total area of 5.22 million acres under the heads 'other uncultivated land excluding fallows' and 'fallows other than current fallows', about 38,000 acres have been located in the State for reclamation. This area is relatively very small as compared with the figures reported in the revenue records. It was explained, however, that the revenue figures could not be relied upon and that large areas of wastelands had already been allotted for cultivation to the members of the Scheduled Castes and the Scheduled Tribes, etc.

(Paragraph 16)

2. The wastelands offered for reclamation in the State may be broadly divided into the following three categories:—

I—Dry lands,
II—Saline lands, and
III—Lands infested with thick growth of bushes and jungle.

(Paragraph 17)

3. The distribution of wastelands in categories I to III is given below:—

Category	*Area* (acres)
I	28,266
II	8,000
III	2,200
TOTAL	38,466

(Paragraph 18)

4. Most of the wastelands in category I are found in the districts of North Arcot, South Arcot, Ramanathapuram, Salem and Tiruchirapalli. The entire area located in the Tirunelveli district and a part of the area in the Ramanathapuram district are not suitable for cultivation. The wastelands in the North Arcot, South Arcot and Ramanathapuram districts are low in fertility and can grow only seasonal crops. The lands in the Salem district are, however, fertile, and, with the provision of irrigation facilities, double cropping can be practised on these lands. In the Tiruchirapalli district, the uplands may be put under crops like cashewnut on a plantation scale. The other wastelands may be utilised for growing millets.

(Paragraphs 21-36)

5. It appears that, of the 33,000 acres allotted for individual cultivation in the Attur taluk of the Salem district, a large part of this area has not been brought under cultivation due mainly to lack of irrigation facilities and the selection of settlers who did not have sufficient resources for reclaiming the lands and for follow-on cultivation operations. In the circumstances, large areas of wastelands are still available in the Attur taluk. A

rapid survey should be conducted to locate these areas so that they could be taken up for cultivation.

(Paragraph 35.3)

6. The saline lands in category II are located in the Tanjore district. These are swampy lands, and are not suitable for cultivation due to their high salt content.

(Paragraph 38)

7. The lands in category III are situated in an area of heavy rainfall, and are suitable for growing rubber, tea, pepper, etc. Some of the lands along the coast where rainfall is not heavy, seem to be suitable for growing crops like cashewnut, cocoanut, etc.

(Paragraphs 39-40)

8. Most of the wastelands located for reclamation belong to the Government, and only a small area is privately-owned. The lands belonging to private individuals may, after reclamation, be handed over to their respective owners for their follow-on cultivation. The cost of reclamation of these dry lands is not likely to be high. The expenditure on contour-bunding of the dry lands may be shared between the Government and the cultivator on the basis of the existing pattern of financial assistance whereby 25 per cent of the expenditure is treated as subsidy to the cultivator and 75 per cent is advanced as loan to be recovered over a period of 10—15 years.

(Paragraph 41)

9. A detailed soil survey for land-use should be carried out in each area proposed for reclamation, so that the lands are put to proper use. The State Government may apply for financial assistance to the Central Soil Conservation Board for conducting these surveys.

(Paragraph 43)

10. After reclamation measures have been carried out, the responsibility for follow-on cultivation should be that of the normal staff of the Agriculture Department. The agricultural staff should suggest suitable cropping patterns and also introduce improved agricultural practices in the reclaimed areas. The extension staff of the Community Development Organisation can assist, particularly in the demonstration of improved methods of cultivation and in arranging for the supply of agricultural requisites.

(Paragraph 44)

11. In the Attur taluk of the Salem district where about 5,500 acres have been located in blocks of 250 acres or more, and where more areas of wastelands are reported to be available (*vide* para. 35.3), the rainfall is about 40 inches, but it is not well-distributed. However, the water-table in all the blocks is fairly high, and open wells can be sunk at a depth of 20—30 feet. Also, in the lands adjoining the hills, there are a number of streams which flow up to the end of February. There are thus adequate facilities for providing irrigation which seems to be necessary to ensure good crops. Similarly, in the district of Tiruchirapalli, facilities for irrigation will have to be provided for successful cultivation of the reclaimed lands.

Accordingly, it is suggested that loans may be given on a liberal scale to the cultivators for sinking wells.

(Paragraph 45)

12. Some of the areas in the Salem and Tiruchirapalli districts are rocky, and it will be difficult to dig wells without the help of equipments like drills, blasting units, etc. It was reported that these equipments were not available in sufficient quantities in the State. As the lands in these two districts have great potentialities for agricultural production, suitable assistance may be given for the import of the necessary equipments for boring wells.

(Paragraph 46)

13. Before the wastelands are allotted to landless labourers, the members of the Scheduled Castes and the Scheduled Tribes, etc., these lands should be reclaimed.

(Paragraph 47)

14. In any settlement project, the selection of suitable settlers is a vital factor contributing to its success. Special attention should be given to this important aspect of settlement work so that the right type of settlers who have an aptitude for agricultural work and who are willing to do hard work are selected.

(Paragraph 48)

15. In order that the settlement work is successful, it is necessary that the revenue/block agency should be associated with it so that the problems of the settlers are attended to as expeditiously as possible. Experience has shown that where the District Collectors and the Block Development Officers take personal interest in the settlement work, the projects are often successful.

16. In view of the availability of large areas of wastelands in the Salem and Tiruchirapalli districts, and the satisfactory progress made in settling landless labourers on these lands, suitable provision should be made under the Third Five Year Plan for executing settlement projects in these districts.

(Paragraph 50)

17. The cost of reclaiming 24,446 acres in category I (excluding 3,820 acres which are not suitable for cultivation) comes to Rs. 27.30 lakhs, *i.e.*, about Rs. 112 per acre. The estimated additional production from the reclaimed lands is 1,95,186 maunds of foodgrains, valued at Rs. 19.51 lakhs. Thus, the value of production will cover the cost of reclamation in about two seasons.

(Paragraph 57)

18. The cost of reclaiming 1,200 acres in category III (excluding 1,000 acres, the cost of reclamation of which is high) is estimated at Rs. 30.00 lakhs, *i.e.*, Rs. 250 per acre. Considering that these lands are suitable for growing crops like pepper, tea, rubber, etc., which are remunerative, their reclamation will be economical.

(Paragraph 58)

19. A study of the economics of reclamation of the different blocks of wastelands in category I reveals that the lands in the Salem district are the most profitable in terms of additional food production, followed by

blocks located in the Tiruchirapalli district. In other blocks, the cost of reclamation is not high, and by the adoption of a suitable system of dry farming, the risk of crop failures can be reduced and normal crop yields obtained.

(Paragraph 59)

20. The following order of priority is assigned to the different areas:—

District	Block No.	Priority
Salem and Kanyakumari	20—24 & 41	I
Tiruchirapalli	25—39	II
Chingleput, North Arcot, South Arcot, Ramanathapuram & Coimbatore.	1, 2—6, 7—13, 16 and 17	III

(Paragraph 60)

(Sd.)
(B. N. Uppal)
Chairman

Members

1. (Sd.) J. P. Mital
2. (Sd.) F. C. Gera
3. (Sd.) M. S. V. Rama Rao

Co-opted-Members

1. (Sd.) Kavthikeyan
   D. A., Madras
2. (Sd.) D. Ambrose
   Supdt. Eng. P.W.D.
3. Sd.) K. R. Venkatesan
   District Forest Officer
   Special Division for Reconnaissance of Eroded Lands, Madras-14.
4. (Sd.) S. Satyabhama
   Dy. Secretary, Revenue Deptt.
5. (Sd.) T. R. Ramakrishnan
   Asst. Secy. to Government, Food & Agriculture Deptt.

(Sd.) A. S. VENU GOPALAN
Secretary

APPENDICES

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APPENDIX 'A'

K. R. Damle, I.C.S.
Secretary

No. F 1024/SPL/59

Government of India

MINISTRY OF FOOD & AGRICULTURE

(DEPARTMENT OF AGRICULTURE)

New Delhi, June 11, 1959.

My dear,

You will agree that the importance of reclamation of culturable waste lands for the purpose of increased agricultural production cannot be overemphasised. The extent of culturable waste lands in the country has been variously estimated and the figures run into millions of acres. These waste lands are of two categories:

(a) lands which are really adjuncts of village *abadis* and are meant to serve as pastures and fuel forests or sites for the extension of the *abadis;* and

(b) large blocks of land which have either gone out of cultivation or have never been brought under cultivation.

It is the latter category which affords the greatest promise for increased agricultural production. The site of large areas of uncultivated land has yet to be determined. Government, therefore, have decided to appoint a Committee of experts which will work in collaboration with experts in the States in regard to which the Committee will make the investigations.

2. The following will be the terms of reference of the Committee:—

(1) to make a survey of land classified as "other uncultivated land excluding fallow lands" and "fallow lands other than current fallows" and locate areas where large blocks of land are available for reclamation and resettlement;

(2) to suggest suitable measures for reclamation according to conditions in different areas and estimate the cost of reclamation and colonisation and the financial assistance and agricultural extension and training necessary for the settlers (the settlements being made on a co-operative basis);

(3) to suggest the terms and conditions upon which settlement should be made, the areas to be allotted and the payments to be made by settlers' co-operatives; and

(4) to estimate the economic aspects of such reclamation in terms of the expenditure involved, the likely addition to food production and the employment and income that would become available to settlers and their families and to lay down the priorities *inter se* between different categories of reclaimable lands.

3. The Committee will consist of the following:—

1. Dr. B. N. Uppal, Agricultural Commissioner, Government of India	*Chairman.*
2. *Dr. J. K. Basu, Senior Director of Soil Conservation, Government of India	*Member*
3. Shri F. C. Gera, Chairman, Central Tractor Organisation	*Member*
4. Shri J. P. Mital, Irrigation Adviser, Ministry of Community Development and Co-operation	*Member*

In addition, the Committee will co-opt in individual States the following officers:—

1. The Development Commissioner;
2. The Revenue Secretary;
3. The Secretary of the Agriculture/Forest Department, or his nominee; and
4. A representative of the Irrigation Department.

4. During the course of the next two or three months, the Committee will take up preliminary work for collection of data with the help of the State Governments and will then visit individual States from the beginning of September, 1959. The intention is that the Committee should complete its work and submit its proposals in respect of one State in about a month and then proceed to take up the investigation in another State. In order to ensure effective coordination and speedy completion of the work, it is suggested that each State Government/Union Territory may kindly appoint a fairly Senior Officer who would be able to devote sufficient time to the work of the Committee, help it in collecting the necessary information and carry on correspondence with it. The name and designation of the officer may kindly be communicated to Dr. B. N. Uppal, Chairman of the Committee.

5. In view of the urgent need for bringing waste lands, wherever available, under cultivation and thus increasing agricultural production, it is hoped that the State Governments would kindly extend their full co-operation and provide the necessary facilities for the work of this Committee.

Yours sincerely,
(Sd.) K. R. DAMLE

Chief Secretaries,
All States and Union Territories.

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*On retirement of Dr. J. K. Basu, Shri M. S. V. Rama Rao, Senior Director of Soil Conservation Government, of India, was appointed a Member from the 3rd February, 1960 *vide* Memo. No. 12-1/59-GMF (Co), dated the 3rd February, 1960 (copy on p. 25).

No. F. 12-1/59-GMF(CO)

GOVERNMENT OF INDIA

MINISTRY OF FOOD AND AGRICULTURE
(DEPARTMENT OF AGRICULTURE)

New Delhi the 3rd February, 1960.

SUBJECT :—*Reclamation of culturable wastelands in the country—Setting up of a Committee.*

Reference this Ministry's Express letter of even number, dated the 17th June, 1959, on the subject mentioned above. The following amendment may please be made in regard to the Membership of the Committee as mentioned in D.O. No. F. 1024/SPL/59, dated the 11th June, 1959, referred to therein:—

"Shri M. S. V. Rama Rao,
Senior Director of Soil Conservation,
Government of India,
in place of Dr. J. K. Basu since retired.'

(Sd.) V. BALASUBRAMANIAN,
Under Secretary.

APPENDIX 'B'

Questionnaire issued by the Wastelands Survey and Reclamation Committee.

1. What is the total area of culturable wasteland in your State?

(Culturable waste land is defined as under:—

All lands available for cultivation, whether not taken up for cultivation or abandoned after a few years for one reason or the other. Such lands may be either fallow or covered with shrubs and jungles and which are not put to any use. They may be assessed or unassessed or may be in isolated blocks or within cultivated holdings. Land once cultivated but not cultivated for five years in succession is included in this category).

2. What is the area under permanent pastures and other grazing lands?
3. What is the extent of land under miscellaneous trees and groves?
4. What is the extent of fallow lands other than current fallows?

(Current fallows are defined as those lands which remain fallow for the current year only.

Lands other than current fallows are defined as lands which are fallow for more than one year but less than five years).

5. Out of the areas at questions 1, 2, 3 and 4 above, is it possible to demarcate blocks of 1,000 acres or more for purposes of colonization and resettlement? If so, how many such blocks?

6. How many blocks could be carved out if the size of the block is reduced from 1,000 acres and more to 500 acres and more? So far as blocks of 1,000 acres or more are concerned, please give details of each block in the form at Appendix 'A' attached.

7. Have any colonization and resettlement operations been carried out in your State during the last 10 years? If so, please give details of areas colonized and resettled, the number of persons resettled, the location of the colonized areas, terms of allotment, and whether the colonization has been successful. The extent of financial assistance given to settlers may also be indicated.

8. Any other remarks that the State Government may like to make in the light of the terms of reference of the Committee.

APPENDIX 'A' VIDE ITEM 6 OF THE QUESTIONNAIRE

STATE :
DISTRICT :

Details in respect of Block No. . . . . *consisting of* 1,000 *acres or more*

(Where blocks of 1,000 acres or more lie contiguously, a single form can be used for the entire area; otherwise separate forms should be used for each block of land).

1. Where is the block located? (Here mention the nearest village or town and the Revenue Tehsil in which the block is located).
2. Is the area included in any Community Development Block? If so, please give the name of the block.
3. What is the nearest Railway Station and the distance of the Station from the block?
4. What is the nearest Post Office and the distance of the Post Office from the block?
5. What is the nearest Telegraph Office and the distance of the Telegraph Office from the block?
6. Is the block connected by road with adjoining villages and towns?
7. If so, is the road fair-weather or all-weather?
8. What is the total area of the block? (If possible, please also supply a map of the block).
9. How much of the area belongs to Government or is with the Panchayats?
10. How much of the area is privately owned?
11. Is it necessary to acquire the whole or part of the land which is privately-owned, in order to carry out the colonization operations in the block successfully?

12. If so, what would be the likely cost of acquisition?
13. Is the area of the land suitable for cultivation as it is, or would it be necessary to do some reclamation work before it could be allotted?
14. If reclamation work is necessary, indicate whether the land is infested with jungle or with weeds or with shrubs and bushes.
15. Whether the land could be reclaimed with the use of manual labour or will it require reclamation by heavy tractors? If the former, is adequate labour locally available?
16. If there are no trees or weeds or shrubs and bushes on the land, is the land eroded? If eroded, please indicate the extent of erosion and the soil conservation measures necessary to make it fit for cultivation.
17. What would be the approximate cost of reclamation or soil conservation per acre of land in the block?
18. What is the type of soil in the block? (alluviums, black, red or lateritic).
19. Is the land flat or gently sloping or steep? What is the depth of the soil?
20. What crops are grown in the area round about the block ?
21. What is the yield per acre of each crop?
22. What is the nearest marketing centre for these crops?
23. What is the extent and distribution of rainfall in the area?
24. Can irrigation facilities be made available for the block? If so, what kind of facilities?
25. Whether these irrigation facilities will be perennial or non-perennial?

26. If no irrigation facilities exist at present, whether any irrigation projects likely to be taken up in Third Five Year Plan will cover this land ?
27. What is the depth of sub-soil water? Is water sweet or brackish?
28. Are anti-malarial operations necessary in the area for successful colonization?
29. Is any endemic disease prevalent in the area? If so, do the State Government contemplate any measures to combat this disease?
30. Is drinking water available in the block?
31. Are there any drinking water wells in use?
32. Is the area subject to depredations of wild animals? If so, what animals?
33. Is the Block likely to attract settlers from distant places in the State or from other States?
34. If the block is not likely to attract settlers from distant places in the State or from other States, what kind of settlers would you recommend for colonization of the block?
35. Do you think educated unemployed could be successfully settled in the block?
36. What should be the unit of allotment per settler?
37. Would you suggest that the settlers should put up their homesteads on allotted lands, or would you like to set up *abadis* for them? If the latter, what should be the unit of allotment for residential purposes in the village *abadi ?*
38. Would it be necessary to organise any training for the settlers, before they are allotted land? (the settlement will be on co-operative basis).
39. Any other details which you may like to give in the light of the terms of reference.

APPENDIX 'C'

DR. B. N. UPPAL,
Chairman, Wastelands Survey and
Reclamation Committee.

D.O. No. F/59-WLS & RC
GOVERNMENT OF INDIA
MINISTRY OF FOOD AND AGRICULTURE
(DEPARTMENT OF AGRICULTURE)
KRISHI BHAVAN, NEW DELHI.

January 2, 1960

Paus 12, 1881.

DEAR SHRI,

Kindly refer to my letter of even number, dated the 10th August, 1959, with which a copy of the questionnaire issued by the Committee was forwarded to you.

2. According to the questionnaire, the State Government was required to demarcate blocks of 1,000 acres or more out of the total area under "culturable waste", "permanent pastures and other grazing lands", "miscellaneous trees and groves" and "fallows other than current fallows", and to give full details of the blocks so selected in Appendix 'A' attached to the questionnaire. The size of blocks was fixed at 1,000 acres or more as it was felt by the Committee that a sufficient number of blocks of this size would be available in all the States. The information now received from some of the States and our discussions with the Liaison Officers of the States of Madhya Pradesh, Bihar and Orissa have led us to think that the availability of culturable wasteland in blocks of 1,000 acres or more for purposes of reclamation and resettlement may be limited. We have, therefore, decided to collect information as in appendix 'A' to the questionnaire issued with the Committee's letter referred to above, for all blocks measuring 250 acres or more.

3. While obtaining this information from the districts, it may be useful to get a certificate from the district officers that the areas other than those in blocks of 250 acres or more out of the total areas under the categories mentioned in para 2 above, are scattered in bits measuring less than 250 acres.

4. I am to request that urgent steps may kindly be taken to collect the required information in respect of blocks measuring 250 acres or more so that the requisite information is available to the Committee by the 31st January, 1960. In view of the fact that the Committee is required to complete its work within the next six months, it is requested that the information may kindly be obtained on a priority basis by deputing some officials to the different districts, if necessary. This should not, however, delay the despatch of information in regard to blocks measuring 1,000 acres or more, which may have already been collected.

5. It appears that the term 'contiguous' used in Appendix 'A' to the questionnaire sent to the States along with our letter of even number, dated

the 10th August, 1959, requires elucidation. I may observe that even if a block is interspersed with a few cultivators' holdings or some natural obstructions, it should be considered more or less compact or 'contiguous' so long as the operations for the reclamation of land included in it can be undertaken on an economic basis.

Yours sincerely,
(Sd.) B. N. UPPAL

All Liaison Officers
in the States and Union Territories.

APPENDIX 'D'

Statement showing yield (in lbs.) per acre of principal crops in Madras during 1957-58 (*District-wise*)

District/Crop	Rice	Jowar	Bajra	Ragi	Kora	Vargu	Samai	Gram	Sugar-cane	Ground-nut	Chillies	Tobacco (cured leaf)	Cotton
Chingleput	958	547	450	770	784	752	490	192	58,240	1,008	900	—	147
South Arcot	1,301	375	400	981	970	1,248	485	196	60,480	1,098	1,459	960	127
North Arcot	1,325	680	420	1,084	855	950	470	186	58,240	1,086	855	1,316	169
Salem	1,561	800	500	725	651	564	360	190	51,520	1,030	1,530	789	155
Coimbatore	1,805	650	475	1,030	686	588	368	196	76,260	1,064	1,642	1,425	188
Tiruchirapalli ..	1,256	700	525	750	670	950	490	196	56,100	1,008	1,380	1,178	145
Tanjore	1,242	1,078	530	1,000	686	950	475	196	56,100	1,109	665	990	133
Madurai	1,541	725	700	1,155	576	882	490	196	62,920	1,053	1,350	1,104	114
Ramanathapuram ..	933	750	600	900	576	810	490	194	45,000	1,064	836	1,127	90
Tirunelveli	1,507	900	500	1,130	485	846	388	200	58,240	1,098	900	1,045	98
The Nilgiris	1,150	542	500	600	—	—	594	192	—	1,098	1,800	—	—
Kanya Kumari	1,743	500	—	—	—	—	—	192	56,200	1,030	1,000	—	92
STATE	1,294	697	509	887	637	922	440	194	60,680	1,064	1,139	1,269	133

APPENDIX 'E'

Land utilisation statistics for Madras for the year 1958-59 (*District-wise*)

District	Total geographical area		Forests	Land not available for cultivation		Other uncultivated land excluding fallows			Current fallows	Fallows other than current fallows	Net area sown
	By professional survey	By village papers		Barren & uncultur-able land	Land put to non-agricultural uses	Culturable waste	Permanent pastures and other grazing lands	Lands under miscellaneous tree crops & groves			
Madras	31,283	32,890	—	—	32,890	—	—	—	—	—	—
Chingleput	1,961,721	1,958,852	120,834	165,264	393,114	131,352	102,682	102,292	144,321	146,703	652,290
South Arcot	2,690,496	2,693,158	158,583	398,324	233,205	144,390	29,113	111,311	143,392	134,101	1,340,739
North Arcot	2,991,098	2,978,241	775,102	182,876	322,725	139,207	52,814	32,762	143,876	114,462	1,214,407
Salem	4,520,442	4,512,923	928,852	493,110	240,082	242,249	127,603	86,307	262,136	206,926	1,925,658
Coimbatore ..	3,851,821	3,863,688	971,442	106,252	148,762	123,094	52,737	15,914	448,032	132,090	1,865,365
Tiruchirapalli ..	3,529,165	3,523,305	169,220	172,363	500,205	365,554	129,595	50,007	254,984	170,559	1,710,818
Tanjore	2,393,344	2,392,602	30,862	100,858	458,237	100,128	15,082	67,941	91,750	96,826	1,430,918
Madurai	3,142,528	3,116,045	394,145	223,734	246,173	86,959	294,425	76,424	254,795	155,216	1,384,174
Ramanathapuram ..	3,103,488	3,088,194	62,743	407,126	284,969	302,881	43,255	50,735	478,378	108,628	1,349,479
Tirunelveli	2,828,243	2,821,006	314,739	141,737	198,214	276,124	72,195	30,985	305,504	356,487	1,125,021
The Nilgiris	629,568	628,970	341,952	21,876	19,332	69,181	19,430	10,495	17,484	12,990	116,230
Kanya Kumari ..	411,520	412,240	122,834	53,805	25,658	6,300	3,000	15,493	3,203	4,212	177,735
STATE ..	32,084,717	32,022,114	4,391,308	2,467,325	3,103,576	1,987,419	941,931	650,666	2,547,855	1,639,200	14,292,834

APPENDIX 'F'

Details of blocks in the different categories offered for reclamation in Madras

District	Name of block	Block No.	Nearest Rly. Station	Whether accessible by all/fair weather road	Whether included in C.D. Block	Total area (acres)	Amount of rainfall (inches)	Depth (feet) & nature of sub-soil water	Endemic diseases
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
				Category I					
Chingleput	Thammanur	1	Walajabad	All weather	Yes	259	42	30—35, sweet	No
North Arcot	Chengalnatham	2	Mukum darayapuram	All weather	Yes	2,000	30—35	7-8, slightly brackish.	No
	Naradapettu	3	Tiruvannamalai	All weather	Yes	513	28	20—30, sweet	No
	Paramanandal	4	Tiruvannamalai	All weather	Yes	370	28	30—40, sweet	No
	Kavaripakkam	5	Sholinghur	Fair weather	Yes	500	42	15—25, brackish	No
	Cholavaram	6	Conjeevaram	All weather	Yes	260	38	18, sweet	No
South Arcot	Pullur	7	Kothakudi	All weather	Yes	280	35—40	N.A.	No
	Indali	8	Chinnasalem	All weather	Yes	492	35—40	N.A.	No
	Bangaram	9	Chinnasalem	All weather	Yes	297	35—40	N.A.	No
	Rayarpalayam	10	Chinnasalem	All weather	Yes	289	35—40	N.A.	No
	Veerabayankaram, Koral, Kugaiyur.	11	Chinnasalem	All weather	Yes	475	35—40	N.A.	No
	Elavado Pandiyankuppam	12	Chinnasalem	All weather	Yes	749	35—40	N.A.	No
	Maravainatham Thenchettiyandal	13	Chinnasalem	All weather	Yes	748	35—40	N.A.	No
Ramanathapuram	Karaikudi	14	Karaikudi	Fair weather	Yes	4,500	30	30, sweet	No
	Mattukurani	15	Nattarasankothai	All weather	Yes	270	25—30	6, brackish	No
	Nattayarendal	16	Karaikudi	All weather	Yes	894	34	15—20, sweet	No
Coimbatore	Vadugapatty	17	Erode	All weather	Yes	400	20—25	20, sweet	No
Tirunelveli	Srimoolakarai Padmanabhamangalam	18	Srivaikuntam	Fair weather	Yes	550	25	N.A.	No
	Kuttam, Muthumothanmozhi	19	Tirunelveli	All weather	Yes	3,000	25	40, brackish	No
Salem	Appasamudram	20	Attur	Fair weather	Yes	1,092	40	20—25, sweet	No
	Paithur	21	Attur	Fair weather	Yes	1,410	40	20—25, sweet	No
	Ramanaickenpalayam	22	Attur	Fair weather	Yes	1,640	40	20—25, sweet	No
	Siruvachur	23	Thalaivasal	Fair weather	Yes	1,002	40	20—25, sweet	No
	Mangini	24	Attur	Fair weather	Yes	384	40	20—25, sweet	No

APPENDIX *'F'*—(contd.)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Tiruchirapally	Sherpudi	25	Kulitalai	Fair weather	Yes	297	27	25—30, sweet	No
	Devanur	26	Kulitalai	Fair weather	Yes	250	27	25—30, sweet	No
	Venkalachalapuram	27	Srirangam	Fair weather	Yes	261	27	30—35, sweet	No
	Shobanapuram	28	Srirangam	Fair weather	Yes	250	27	30—35, sweet	No
	Sedamangalam	29	*	Fair weather	No	265	15	30—35, sweet	No
	Vazhiur	30	*	Fair weather	No	600	15	30—35, sweet	No
	Edumalai	31	*	Fair weather	No	300	15	30—35, sweet	No
	Omanadur	32	*	Fair weather	No	455	15	30—35, sweet	No
	Vandalai Gadalur	33	*	Fair weather	No	387	15	30—35, sweet	No
	Naikulam	34	*	Fair weather	No	310	15	30—35, sweet	No
	Perakurikka	35	*	Fair weather	No	472	15	30—35, sweet	No
	T. Leranipalayam	36	*	Fair weather	No	520	15	30—35, sweet	No
	Nambukurichi	37	*	Fair weather	No	772	15	30—35, sweet	No
	Sirukalappur	38	*	Fair weather	No	500	15	30—35, sweet	No
	Melararur	39	*	Fair weather	No	253	15	30—35, sweet	No
				Category II					
Tanjore	Maravakkadu	40	Thambikottay	Fair weather	Yes	8,000	35	—, may be brackish	No
				Category III					
Kanya Kumari	Thadikarankoram	41	Trivandrum	All weather	Yes	1,200	80—100	N.A.	No
	Muttam	42	Trivandrum	All weather	Yes	1,000	40	60—100, sweet	No

*The blocks are located in the interior and are situated far from the railway stations.

APPENDIX 'G'

Statement showing the ownership of the areas in categories I, II and III offered for reclamation

District	Block No.	Area of block (acres)	Area belonging to		
			Government	Private individuals	Village panchayats
	Category I				
Chingleput	1	259	259	—	—
North Arcot	2—6	3,643	*a*	*a*	*a*
South Arcot	7—13	3,330	*b*	*b*	*b*
Ramanathapuram	14—16	5,664	5,639	25	—
Coimbatore	17	400	400	—	—
Tirunelveli	18	550	N.A.	N.A.	N.A.
Salem	19	3,000	1,000	2,000	—
Tiruchirapalli	20—24	5,528	5,528	—	—
	25—39	5,892	5,892	—	—
	Category II				
Tanjore	40	8,000	8,000	—	—
	Category III				
Kanya Kumari	41	1,200	*c*	*c*	*c*
	42	1,000	N.A.	N.A.	N.A.

a—Details not available. The areas belong mostly to Government.
b—Details not available. The areas belong mostly to private individuals.
c—Ownership under dispute.
N.A.—Not available.

APPENDIX 'H'

Model scheme for settlement of landless labourers particularly the Scheduled Castes and the Scheduled Tribes on a co-operative basis in the Madras State

About 23,000 acres of wastelands are available in the districts of North Arcot, South Arcot, Ramanathapuram, Salem and Tiruchirapalli, which can be utilised for settlement of landless labourers, particularly the Scheduled Castes and the Scheduled Tribes. The areas in the Salem and Tiruchirapalli districts offer good scope for undertaking settlement schemes as the lands are fertile in the former district, and in the latter district, settlement schemes have been successfully executed. Although no irrigation facilities are available at present, large areas can be brought under irrigation by the construction of shallow wells. A variety of agricultural crops can be grown in these areas, and, on an average, about 8—15 maunds of food-grains per acre can be obtained.

A model settlement scheme for the area is given below :

It is proposed to settle on these lands landless labourers, particularly the Scheduled Castes and the Scheduled Tribes on a co-operative basis. It is not intended to present a rigid scheme since flexibility of details to suit local conditions in the *sine qua non* of the success of the settlement scheme. The co-operative method of organisation can be applied in settlement work in the following manner:

(1) Land may be individually owned and operated, but all the services may be provided by a service co-operative of which the settlers are members; and

(2) Land may be owned individually, but jointly operated (*i.e.*, Co-operative Joint Farming).

In organising the societies, the viability and mutual knowledge and confidence which strengthen the co-operative character should receive due weight. The broad outlines of these patterns are indicated below :

Pattern I : *Individual farming with the help of service co-operatives*

Membership would be open to all the settlers to whom land has been granted in the area of operation of the society. It should be one of the conditions of allotment that the allottee shall be a member of the co-operative society and that he will follow the production programme and technical advice offered by the Society. The co-operative society caters to the needs of the members, such as credit for agricultural production and supplies of agricultural requisites like fertilisers, improved seeds, insecticides etc., and of domestic requirements. The society will also arrange for the marketing of the agricultural produce of its members.

Allotment of land : The unit of land to be allotted to each settler will be 5 acres. The allottees will have the right to alienate their lands only after they pay back all the advances made to them by the Government. As the lands are not initially fit for cultivation and will entail expenditure on reclamation, the land revenue may be charged as follows:

1st year	..	No land revenue.
2nd year	..	1/3 of the assessed land revenue.
3rd year	..	2/3 of the assessed land revenue.
4th year & onwards	..	Full land revenue.

It should be obligatory on the part of the allottee to cultivate the land himself or with the help of his family members.

Method of working : Each settler shall become a member of the society consisting of 50 settlers. He will receive from Government loan assistance for subscribing to the share capital of the society at the rate of Rs. 25 per member. This amount will be repayable in a period of 5 years. The maintenance expenditure given to each family will be deposited with the society; the society will release the amount to the members concerned as and when needed. The society, if desired by the members, may also provide domestic requirements against their deposits.

One Agricultural Officer will supervise the work of a group of 5 societies. He will assist each society in drawing up production plan, and all the agricultural operations should be carried out by the members in accordance with the programme. The society will supply fertilisers, improved seeds, etc., and, where necessary, heavy agricultural implements on hire. After the produce is harvested, the members will bring their produce to the society, which will arrange for its marketing through the marketing society or through the normal marketing channels.

The affairs of the society will be managed by a Managing Committee elected annually by the members of the society. The society will have a manager to look after the maintenance of accounts, etc. The services of the specialist staff will be made available by the State Government.

Social amenities :

(i) *Homestead* : About 1/6th of an acre of land may be allotted as a homestead plot. The value of the plot is estimated at Rs. 50.

(ii) *House building* : A sum of Rs. 1,000 may be advanced to each family towards the cost of building a house.

(iii) *Provision of drinking water* : One drinking water well with a hand pump may be provided for 25 families. The cost of the two wells with pumps will be Rs. 6,000, and the average cost per family will come to Rs. 120.

(iv) *School* : For a colony of 50 families, a school may be provided. The Education Department of the State will provide funds for this purpose.

(v) *Dispensary* : Provision for a dispensary may be made for each colony. The Medical Department will provide funds for this purpose.

Reclamation charges : The average cost of reclaiming the land will be about Rs. 110 per acre. Since the unit of allotment is 5 acres, the average cost will be Rs. 550 per family.

Follow-on cultivation charges : A sum of Rs. 600 will be required for meeting the cultivation charges on rainfed crops.

Rs. 600 may be provided per family for a pair of bullocks, etc.

Provision for rearing sheep : A sum of Rs. 50 may be provided to each settler for rearing sheep in order to supplement his income from agriculture.

Maintenance expenditure : During the first few years when the returns from the reclaimed lands are not likely to be sufficient to cover the expenses of the settlers, it is necessary to advance to them some money for maintenance. The schedule of payment for each family may be worked out on the basis of a means test. Provision for maintenance charges of Rs. 600 may be made for a period of one year.

Administrative set up : A sum of Rs. 50 (one Manager on Rs. 100 p.m. plus D.A. and 1/5th the pay of Agricultural Officer at Rs. 200 p.m. plus D.A. Approximately, Rs. 2,500 for each colony) will be spent per family towards the administrative set-up.

To sum up, the details of expenditure per family on the various items will be as under:—

	Rs.
(1) Value of land	1,500
(2) Social amenities	1,170
(3) Reclamation charges	550
(4) Follow-on cultivation	1,200
(5) Provision for rearing sheep	50
(6) Maintenance expenses	600
(7) Administrative set-up	50
TOTAL	5,120

Pattern of assistance : Financial assistance for implementing the scheme to be given to individuals as well as the co-operative society should be as follows:

	Loan	*Grant*
	Rs.	Rs.
I. ***Individual members :***		
(*a*) Share capital	25	—
(*b*) Homestead plot and house	1,050	—
TOTAL	1,075	—
II. ***Through co-operative society :***		
(*a*) Drinking water supply	—	120
(*b*) Reclamation charges	550	—
(*c*) Maintenance expenses	600	—
(*d*) Follow-on cultivation;		
(*i*) Bullocks and implements	600	—
(*ii*) Cultivation charges	600	—
(*e*) Provision for rearing sheep	50	—
(*f*) Administrative set-up	—	50
TOTAL	2,400	170

The loans for cultivation charges will be interest-free and recoverable one year after the harvest. The loans for bullocks, equipment, etc., should be recovered from the third year in 5 annual instalments with the rate of interest as for taccavi loans. The loans for the homestead plot and house building should be recovered from the 5th year in 15 annual instalments with the rate of interest as for taccavi loans. The occupancy price of land should be paid from the 6th year in 5 annual instalments.

Pattern II : Individually owned but jointly operated.

The co-operative joint farming settlement envisages that the ownership of the land will vest in individuals, but cultivation will be carried on jointly.

Allotment of land : The scale of allotment of land to individuals will be as indicated in Pattern I. The difference would be that the land, although owned individually, would be operated and managed jointly.

Method of working : The society will formulate the production plan through its elected Managing Committee. The Managing Committee may formulate the day-to-day working plan for the members either by forming some special groups or on an *ad hoc* basis. The means of cultivation *i.e.*, seeds, fertilisers, implements, bullocks etc., will be drawn from the common pool of the society. In case any of the members have got their own bullocks, they could be taken on hire according to the local prevailing rates. The members would be paid wages for the work put in. In the initial stages, the amount of subsidy received from the Government towards the wages on labour, maintenance charges etc. would be availed of for this purpose. The crop would jointly be harvested and the income would be disbursed among the members after deducting the expenditure incurred by the society. The Agricultural Officer attached to a group of 5 societies will provide the necessary technical guidance with regard to the formulation of the production programme, the use of fertilisers, choice of improved seeds, etc. The day-to-day affairs of the society will be managed by a Committee elected annually by the members. The Manager of the society will keep the necessary accounts, etc.

The social amenities, reclamation charges, follow-on cultivation charges, maintenance expenditure and administrative set-up for the organisation of this scheme will be the same as in Pattern I.

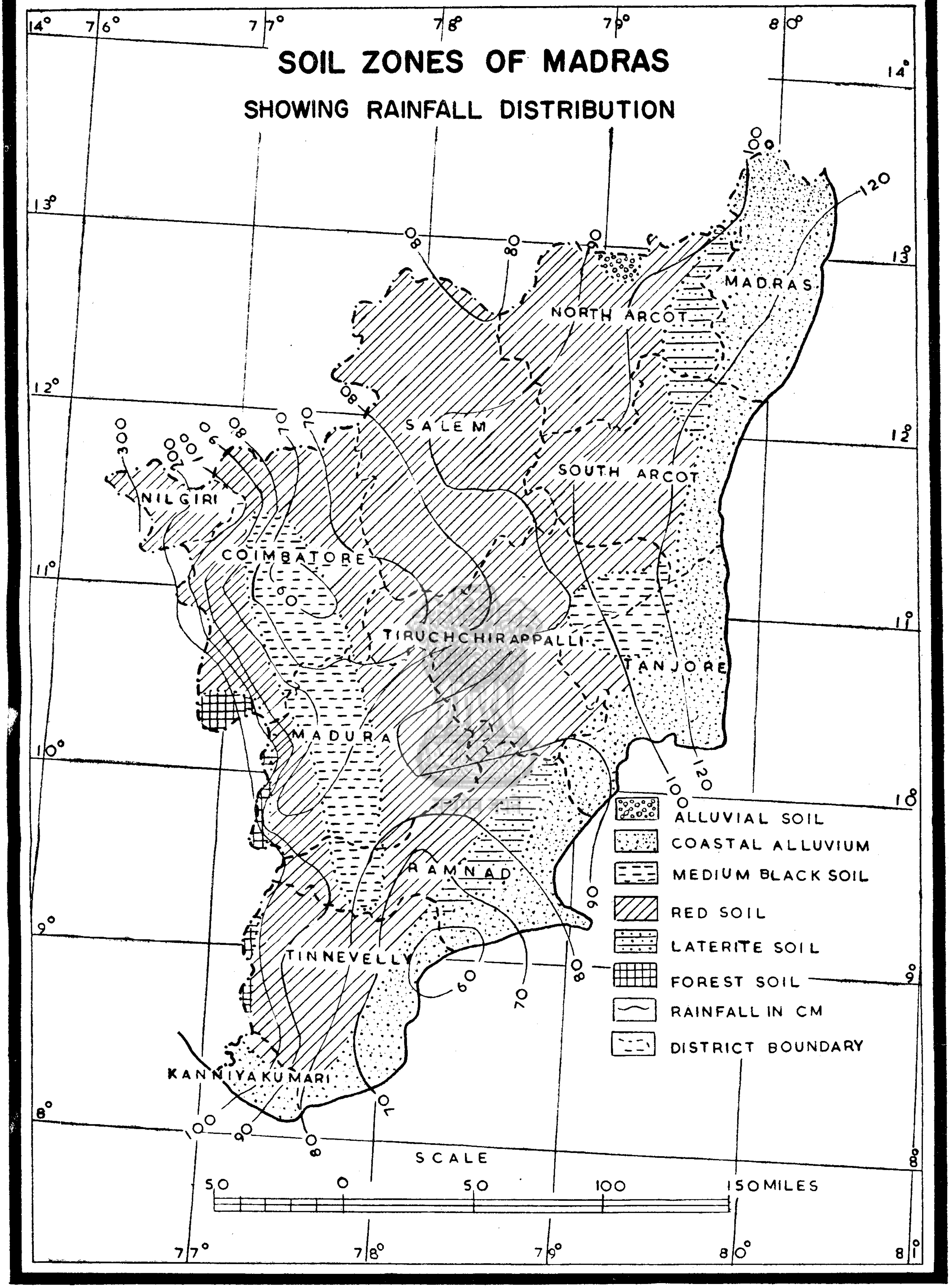
This pattern will also facilitate undertaking of the follow-on cultivation.

Pattern of assistance : All the assistance, except loans for homestead and social amenities, should be given to the society. In case the members wish to undertake the work of house building jointly, this may be entrusted to the society.

L4Deptt. of A—61—500—(Sec. I)—17-7-62—GIPF.

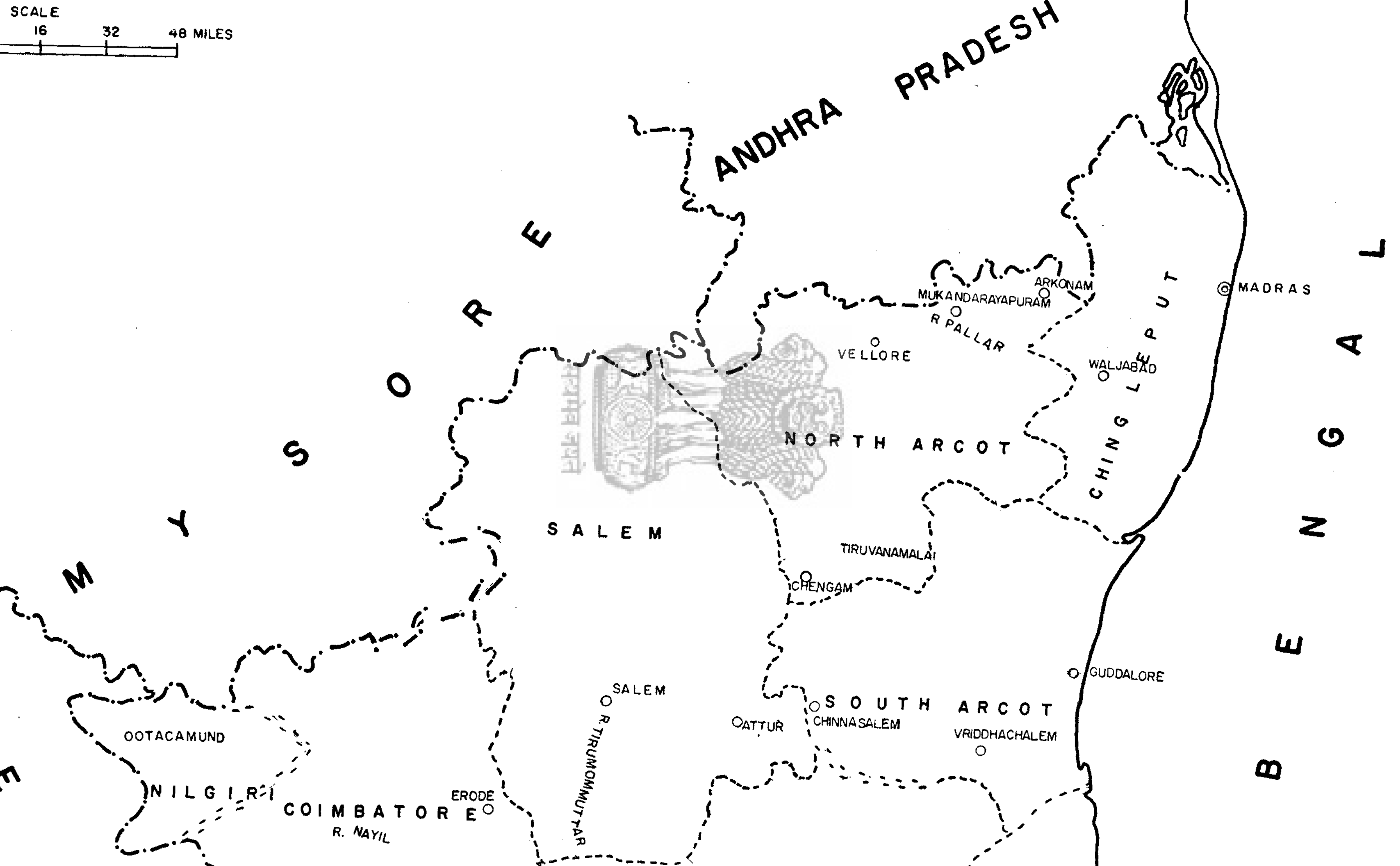
SOIL ZONES OF MADRAS

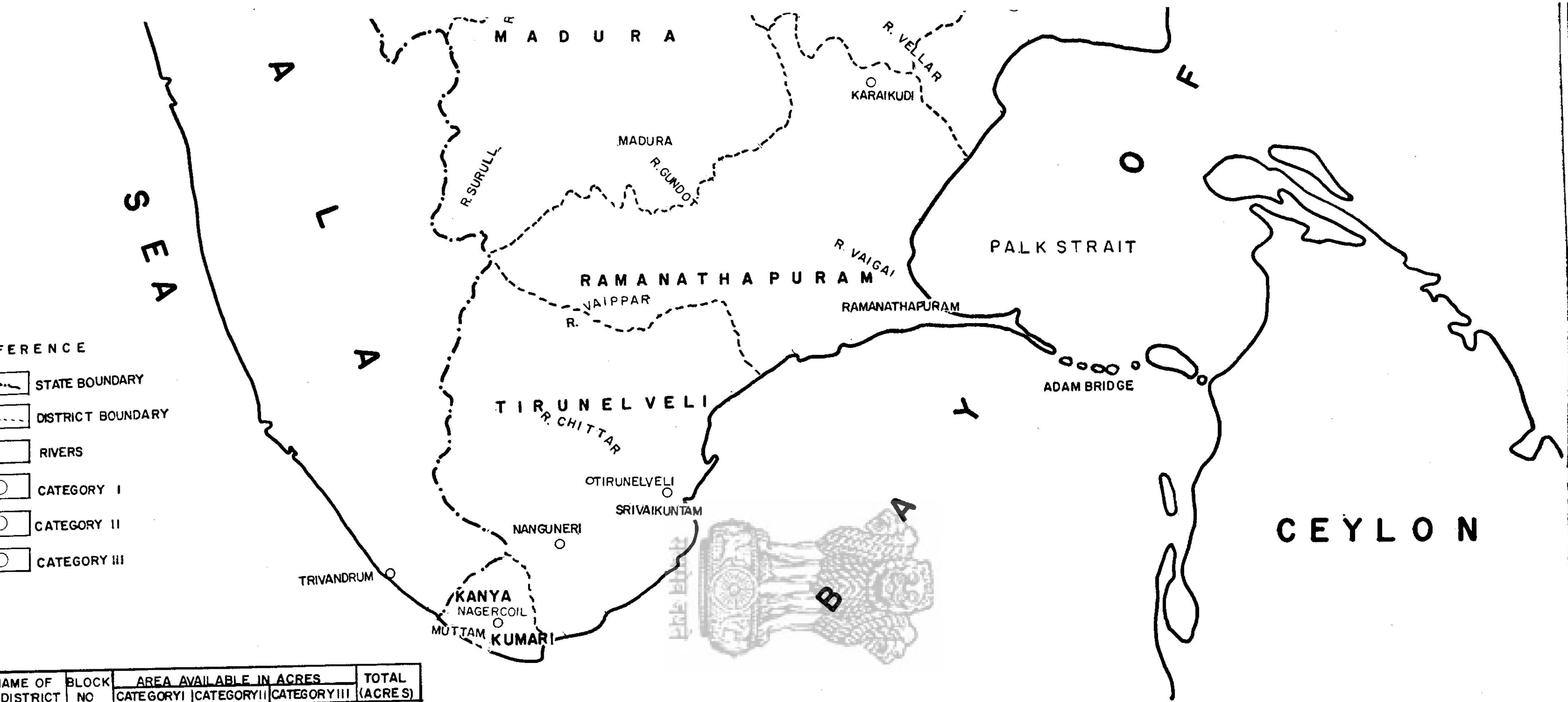
SHOWING RAINFALL DISTRIBUTION



Cartographic Laboratory, I.A.R.I., New Delhi-12.

F 250 ACRES OR MORE)





AME OF DISTRICT	BLOCK NO	AREA AVAILABLE IN ACRES			TOTAL (ACRES)
		CATEGORY I	CATEGORY II	CATEGORY III	
INGLEPUT	1	259	–	–	259
ORTH ARCOT	2–6	3,643	–	–	3,643
UTH ARCOT	7–13	3,330	–	–	3,330
AMANATHAURAM	14–16	5,664	–	–	5,664
OIMBATORE	17	400	–	–	400
IRUNELVELI	18–19	3,550	–	–	3,550
ALEM	20–24	5,528	–	–	5,528
RUCHIRAALLI	25–39	5,892	–	–	5,892
ANJORE	40	–	8,000	–	8,000
ANYA-UMARI	41–42	–	–	2,200	2,200
OTAL		28,266	8,000	2,200	38,466

R.P. Gupta